

REMARKS/ARGUMENTS

Claims 14, 21, 25 and 29 have been amended. Claims 14 and 17 to 29 remain in the application, of which claims 14, 21, 25 and 29 are the independent claims. Reconsideration and further examination are respectfully requested.

Claim 14 has been amended to recite that the reverse link signal comprises a plurality of combined subchannel signals. Support for this amendment can be found, for example, in page 6, lines 28-31 and Figure 2 of the originally-filed specification. Independent claims 21, 25 and 29 have been similarly amended. No new matter is believed to have been added by this amendment.

Claim Rejections – 35 USC § 101

Claims 14 and 17-20 were rejected under 35 USC § 101 for being directed to non-statutory subject matter. Reconsideration and withdrawal of this rejection is respectfully requested.

While not conceding the correctness of the rejection and in an effort to expedite prosecution, Applicants have amended claim 14 to recite receiving by a receiver. Therefore, Applicants respectfully request that the section 101 rejection of claim 14, and claims 17-20 which depend from claim 14, be withdrawn.

Claim Rejections – 35 USC § 103

Claims 14 and 17-29 were rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 5,621,723 (“Walton”) further in view of U.S. Patent No. 5,832,387 (“Bae”) further in view of U.S. Patent No. 5,930,706 (“Raith”). Reconsideration and withdrawal of these rejections are respectfully requested.

Independent claim 14 is directed to a method in a base station comprising receiving, by a receiver, from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals, independently adjusting transmit powers of more than one of said plurality of subchannel signals to different levels by generating power control messages for adjusting the transmit powers of more than one of said plurality of subchannel signals, and comparing a frame error rate of each of said subchannel signals with a frame error rate threshold for said generating said power control messages.

Applicants submit that none of the applied references, taken either alone or in combination, is seen to disclose or suggest at least the features of receiving from a single remote station a reverse link signal that comprises a plurality of combined subchannels and independently adjusting transmit powers of more than one of the plurality of subchannels signals to different levels by generating power control messages for adjusting the transmit powers of more than one of said plurality of subchannel signals.

While disagreeing with Examiner's contention that Walton discloses a reverse link signal comprising a plurality of subchannels, Applicants have amended claim 14 to recite that the reverse link comprises a plurality of combined subchannels to further distinguish the reverse link signal of claim 14 from Walton.

Walton is seen to be generally directed to power control on the reverse link of a CDMA system. As read by Applicants, Walton teaches eight reverse packet data channels associated with different data rates that are supported in a packet data network. Walton, col. 3, ll. 31-40. Walton also teaches that a mobile unit determines a reverse link data rate based on its power class and estimated power margin, and selects the reverse packet data channel corresponding to the maximum data rate which the link can support. Walton, col. 3, ll. 22-30. Thus, the mobile unit of Walton determines a data rate, selects one of the reverse link data channels for transmission to the base station based on the data rate determination, and transmits to the base station on the selected one of the reverse link data channels. Thus, the base station of Walton receives a reverse link signal from the mobile unit comprising the selected one of the reverse packet data channels. The reverse link signal does not comprise more than the selected one of the reverse packet data channels, much less comprise a plurality of combined reverse packet data channels. Thus, Walton does not teach or suggest the feature of receiving from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals as recited in claim 14.

The Final Office Action cited col. 3, lines 37 to 67 of Walton as allegedly disclosing that the reverse packet data channels of Walton are combined to support different frequency rates. See page 10 of the Final Office Action. Applicants respectfully disagree. Nowhere in the cited portion or anywhere else does Walton disclose that the reverse packet data channels are combined. As discussed above, Walton supports different reverse link data rates by having different reverse packet channels corresponding to different data rates and selecting one of the

reverse packet channels corresponding to the maximum data rate which the link can support. Walton, col. 3, ll. 22-30.

Because Walton fails to teach or suggest receiving a reverse link signal from a single remote station that comprises a plurality of combined subchannel signals, Walton necessarily fails to teach or suggest independently adjusting transmit powers of more than one of the plurality of subchannels signals of the reverse link signal to different levels.

Neither Bae nor Raith are seen to remedy the foregoing deficiencies of Walton for at least the reason set forth below.

Bae is directed to a power allocation apparatus for a multicarrier transmission system, in which data is transmitted on a transmission channel comprising subchannels having different frequency bands. Bae, col. 1, ll. 7-11, and col. 4, ll. 57-61. The multicarrier transmission system of Bae is used to transmit data for multiple subscribers over a wired line, for example, a copper wired line in an asymmetric digital subscriber line (ADSL) system. Bae, col. 2, ll. 19-39. Bae is not directed to a CDMA system, in which a base station receives a reverse link signal from a remote station.

The purpose of the power allocation apparatus of Bae is to allocate power to the different subchannels in a manner that compensates for efficiency losses of the multicarrier transmission system caused by frequency selective interference. Bae, col. 7, ll. 4-13 and col. 7, l. 66 to col. 8, l. 4 and Fig. 9. Because the subchannels have different frequency bands, the frequency selective interference impacts the signal-to-noise ratios (SNRs) of the subchannels differently. Bae, Fig. 10B and col. 7, ll. 20-24. The power allocation apparatus of Bae compensates the multi-carrier transmission system for frequency selective interference by initially assigning power to subchannels of different frequency bands in proportion to calculated SNRs for the subchannels (Fig. 10B), limiting the power for subchannels within frequency band f_1 to power limit P_1 (Fig. 11A), reassigning remaining power to the other subchannels (Fig. 11B), and limiting the power for subchannels within frequency band f_2 to power limit P_2 (Fig. 11C). Bae, Figs. 10B-11C and col. 7, ll. 30-56. The power limits are dependant on the frequency bands of the subchannels.

Bae does not teach or suggest a base station receiving from a single remote station a reverse link signal comprising a plurality of combined subchannel signals, and therefore fails to cure the same deficiencies of Walton. By contrast, Bae discloses a multicarrier transmission

system that transmits different frequency-band subchannels for multiple subscribers over a wired line. Bae, col. 2, ll. 19-39.

Further, Applicants submit that, contrary to the Final Office Action, it would not have been obvious to incorporate the concept of independently adjusting more than one subchannel of Bae with the system of Walton for improved performance. See page 2 of the Final Office Action. As discussed above, Bae teaches that independently adjusting the power of subchannels improves performance by compensating for frequency selective fading of multicarrier transmissions. Since the CDMA system of Walton does not use multicarrier transmissions, and therefore does not suffer from the frequency selective fading of multicarrier transmissions, one skilled in the art would have no reason to expect that incorporating the concept of adjusting more than one subchannel of Bae with the CDMA system of Walton would lead to improved performance of the CDMA system of Walton. Indeed, the Final Office Action provided no rationale beyond its conclusory statement for why one skilled in the art would expect that incorporating the concept of adjusting more than one subchannel of Bae with the CDMA system of Walton would lead to improved performance of the CDMA system of Walton.

Raith, which was cited by the Final Office Action for its alleged disclosure of the power control message being based on a frame error rate, fails to remedy the above deficiencies of Walton and Bae. More particularly, Raith fails to disclose or suggest the features of receiving from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals and independently adjusting transmit powers of more than one of the plurality of subchannels signals to different levels by generating power control messages for adjusting the transmit powers of more than one of said plurality of subchannel signals.

For at least the reasons above, Applicants believe that claim 14 is allowable over the applied references and respectfully request that the rejection of claim 14 be withdrawn.

Independent claims 21, 25 and 29 includes features similar to those of claim 14, and are believed to also be allowable over the applied references for at least the reasons given for claim 14.

The other claims currently under consideration in the application are dependent from the independent claims discussed above and therefore are believed to be allowable over the applied references for at least the same reasons. Because each dependent claims is deemed to define an

addition aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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